

REMARKS/ARGUMENTS

This Amendment is submitted in response to the Office Action of December 18, 2002. This Amendment is provided within the period for reply extending to April 18, 2003, with a one month extension. Claims 1-3, 6-7, 10, 13, 16, and 21 have been amended in this Amendment. Claims 1-18 and 20-21 remain pending in this case.

Rejections under 35 U.S.C. § 103

Clarifying amendments have been made to claims 1-3, 6-7, 10, 13, 16, and 21. Some of the clarifying amendments have been made to establish more clearly that the presently claimed invention requires the graphical user interface to be provided by the client component at a client computer system. Also, the graphical user interface is required to provide a graphical representation of the enterprise network and icon links to configuration tools for selecting and structurally defining the RAID array of disks of the storage enclosure. Selecting and structurally defining the RAID array of disks of the storage enclosure is required to be performed at the client computer system, whereas the storage enclosure containing the RAID array of disks is connected to the server computer system. None of the cited art of record teaches or suggests a storage area network management and configuration system capable of providing a graphical user interface that allows a RAID array of disks to be selected and structurally defined from a client computer system that is not connected to the storage enclosure containing the RAID array of disks.

Claims 1, 2, 14-17 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wollrath et al. ("Wollrath") (U.S. Pat. No. 6,263,350) in view of Smith et al. ("Smith") (U.S. Pat. No. 5,829,053) and further in view of Ofer et al. ("Ofer") (U.S. Pat. No. 5,890,204). These rejections are respectfully traversed.

Claims 3-10, 13, and 20-21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wollrath in view of Smith further in view of Ofer and further in view of Leong et al. ("Leong") (U.S. Pat. No. 6,269,398). These rejections are respectfully traversed.

Claims 11-12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wollrath in view of Smith further in view of Ofer further in view of Leong and further in view of Madsen et al. (U.S. Pat. No. 6,151,620). These rejections are respectfully traversed.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references or in the knowledge generally available to one having ordinary skill in the art, to combine the references. Additionally, the references when combined must teach or suggest all the claim limitations. As discussed below, the Office has not established a *prima facie* case of obviousness because there is neither suggestion nor motivation, in either the references or in the knowledge of one having ordinary skill in the art at the time of the invention, to have combined the references in the manner proposed. Furthermore, the references when combined do not teach or suggest all of the claim limitations.

Wollrath teaches a method for handling the usage of resources, namely memory resources, in a distributed computing environment. When multiple computer programs or objects use memory to complete an operating task, the memory is allocated to that computing entity until it no longer needs the memory. However, in some cases, the allocated memory is not de-allocated and made available to other computing entities. For this reason, Wollrath uses a method for leasing storage locations in a pre-configured network computing system. The storage location leasing method includes a receipt of a lease request, a grant or denial of a lease request, a receipt of a lease modification request,

and a reclamation of a leased storage location. The storage location leasing method ensure that memory resources get de-allocated when no longer in use by computing entities. The storage location leasing method is required to be implemented on a network computer system that has been pre-configured without need for further configuration management.

Smith teaches a method for memory management by nesting partitioned storage devices that have separate partition managers and device drivers to create a plurality of virtual storage devices. The separation of partition managers and device drivers functions to allow for the nesting of partition formats and avoids the replication of partitioning codes. In an exemplary discussion, Smith teaches that the physical storage media may include one or more RAID arrays.

Ofer teaches the use of a limited graphical user interface (GUI) for determining the status and configuration of a mass storage system, Ofer also teaches the use of a limited GUI to modify the interconnections between ports associated with a host computer and a disk array. Specifically, the GUI taught by Ofer includes "... a pictorial representation of interconnections between ports connected to the disk array, enabling a user to modify the pictorial representation at the host to reconfigure the connections to the host computer and disk array ..."

Leong teaches methods for discovering "router" entities in order to create graphical user interfaces. The graphical user interfaces can then be used to generate icons for viewing aspects of the routers. Specifically, Leong (Figure 4, Items 441, 442, and 443) teaches the use of GUI buttons to link to views of router interface configurations, router fault statistics and history, and router interface performance statistics and history. In teaching these methods, Leong discloses methods for discovering connections of the routers to better interface with a wider area network.

With respect to Claims 1 and 18, Wollrath does not teach a storage area network management and configuration system. Rather, the storage location leasing method taught by Wollrath is disclosed as being implemented on a networked computer system that has already been configured. Although Wollrath generally teaches the networking of computers, the reference does not teach the use of a client computer to access a storage enclosure connected to a server component to enable full configuration and management.

Also with respect to Claims 1 and 18, Smith does not teach the use of an enterprise network or a storage area network management and configuration system. Smith does teach the use of a RAID device in an exemplary discussion of the disclosed method for memory management. However, this teaching of RAID device usage in the context of a memory management method neither teaches nor suggests the methods for RAID device configuration and management as claimed in the present invention. Furthermore, Smith does not teach the use of a GUI having graphical representations and icon links to configuration tools for controlling a RAID device.

Ofer teaches a limited GUI based on a pictorial representation of interconnections which allows determination of the status and configuration of a mass storage system and performance of modifications to the mass storage system that are limited to changing the interconnection configuration. However, the Office relies on Ofer to teach a GUI, provided by the client component at the client computer system, capable of providing a graphical representation of the enterprise network and icon links to configuration tools for selecting and structurally defining, at the client computer system, the RAID array of disks of the storage enclosure.

The GUI disclosed in Ofer does not include a graphical representation of the enterprise network. Rather, the GUI disclosed by Ofer only provides a graphical display of the interconnections between components of a mass storage system. The mass storage

system is not equivalent to an enterprise network. The mass storage system is only one component in the enterprise network.

Also, the GUI disclosed by Ofer does not include icon links to configuration tools for selecting and structurally defining the RAID array of disks, wherein the GUI is provided and used at the client computer system. The configuration tools which allow a user to remotely configure drives, as claimed in the present invention, differ in both form and function relative to the pictorial representations of interconnections taught by Ofer. Additionally, Ofer requires that any RAID configuration change be performed at the host computer to which the storage system is attached (column 6, lines 42-45). In contrast, the presently claimed invention allows RAID configuration to be performed at a client computer system, wherein a GUI provided at the client computer system provides a graphical representation of the enterprise network and icon links to configuration tools for selecting and structurally defining the RAID array of disks.

The Office relies on column 4, lines 50-60, of Ofer to teach selecting and structurally defining the RAID array of disks. Column 4, lines 53-58, of Ofer state the following: "In particular, the ability to obtain a configuration mapping showing the interconnection of the storage devices and the host ports at the storage controller, and to easily modify those connections using a convenient graphical user interface at the host computer, enables a user to modify, on the fly, the entire logical structure of the disk storage system." Ofer requires the graphical user interface to be used at the host computer. The presently claimed invention allows a storage system to be remotely configured through a GUI at a client computer system (i.e., not at a host or server computer system to which the storage enclosure is connected).

Neither the teachings nor the nature of the problem solved in either Wollrath, Smith, or Ofer, or the combination thereof, motivate or suggest to one of ordinary skill in

the art at the time of the invention to combine the reference teachings in a manner that would make the claimed invention obvious. Furthermore, the unmotivated combination of Wollrath, Smith, and Ofer fails to teach all of the claimed features of Claims 1 and 18. For at least these reasons, the Applicants respectfully request that that rejections of independent claims 1 and 18 be withdrawn. For at least the same reasons, the Applicants respectfully submit that dependent claims 2, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 20 are patentable over the cited art of record.

With respect to Claims 3 and 21, Leong does not teach the array builder link as claimed in the present invention. The array builder link of the claimed invention provides selection tabs to allow array building from an array template or from scratch. Leong Figure 4, Items 441, 442, and 443, as referenced by the Office for a basis of rejection of Claim 3, do not teach or suggest the array builder icon link or associated selection tabs as claimed in the present invention. Actually, Leong Figure 4, Items 441, 442, and 443, refer to GUI buttons for linking to views of router interface configurations, router fault statistics and history, and router interface performance statistics and history. A way for building an array of disks as claimed in the present invention is completely unrelated to router interface configurations, statistics, and history. Furthermore, the act of viewing a configuration, set of statistics, or history related to a router interface neither teaches nor suggests the creation of an array of disks as facilitated by the array icon builder link and associated selection tabs as claimed in the present invention.

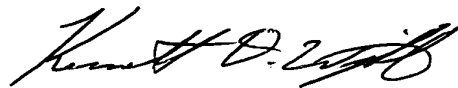
With respect to Claim 21, Leong neither teaches nor suggests the use of a GUI control for enabling a user to remotely configure drives of a storage enclosure. Furthermore, Leong neither teaches nor suggests that a GUI control include one or more of an array modifier icon link, an enterprise monitor icon link, an array builder icon link, an event notifier icon link, an unconfigured hardware icon link, a templates icon link, and an

enterprise icon link. Leong, Column 11, Lines 6-25, as referenced by the Examiner for a basis of rejection of Claim 21, refer to a router status icon whose function is to display a particular color based on the router status (e.g., green=normal, red=problem, etc ...). Neither a router, a router status icon, or an icon display color is related to the claimed invention. Therefore, Leong, Column 11, Lines 6-25, neither teach nor suggest any feature of the claimed invention.

① To the extent that Claims 3 and 21 include features of Claims 1 and 18, the previous arguments rebutting the establishment of a *prima facie* case of obviousness against Claims 1 and 18 based on Wollrath, Smith, and Ofer also apply to Claims 3 and 21. Neither the teachings nor the nature of the problem solved in either Wollrath, Smith, Ofer, or Leong, or the combination thereof, motivate or suggest to one of ordinary skill in the art at the time of the invention to combine the reference teachings in a manner that would make the claimed invention obvious. Furthermore, the unmotivated combination of Wollrath, Smith, Ofer, and Leong fails to teach all of the claimed features of Claims 3 and 21. For at least these reasons, the Applicants respectfully request that that rejections of independent claims 3 and 21 be withdrawn. For at least the same reasons, the Applicants respectfully submit that dependent claims 4 and 5 are patentable over the cited art of record.

Accordingly, a notice of allowance is respectfully requested. If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 749-6900 ext. 6914. If any other fees are due in connection with filing this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. ADAPP091A). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
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